BioMap and Living Waters

Guiding Land Conservation for Biodiversity in Massachusetts

Core Habitats of Rochester

This report and associated map provide information about important sites for biodiversity conservation in your area.

This information is intended for conservation planning, and is not intended for use in state regulations.

Produced by:

Natural Heritage & Endangered Species Program
Massachusetts Division of Fisheries and Wildlife
Executive Office of Environmental Affairs
Commonwealth of Massachusetts

Produced in 2004

BioMap and Living Waters:
Guiding Land Conservation for Biodiversity in Massachusetts

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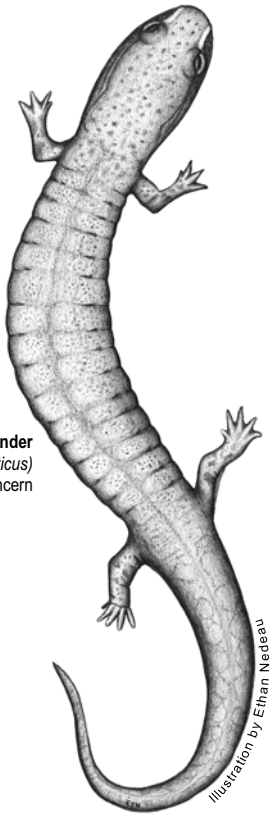
* Depending on the location of Core Habitats, your city or town may not have all of these sections.



Spring Salamander
(Gyrinophilus porphyriticus)
Species of Special Concern

Funding for this project was made available by the Executive Office of Environmental Affairs, contributions to the Natural Heritage & Endangered Species Fund, and through the State Wildlife Grants Program of the US Fish & Wildlife Service.

Natural Heritage & Endangered Species Program

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For more information on rare species and natural communities, please see our fact sheets online at ***www.nhesp.org***

BioMap and Living Waters:
Guiding Land Conservation for Biodiversity in Massachusetts

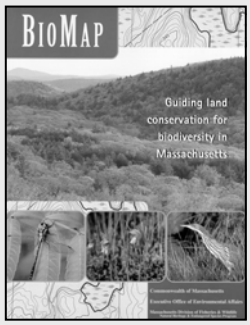
Introduction

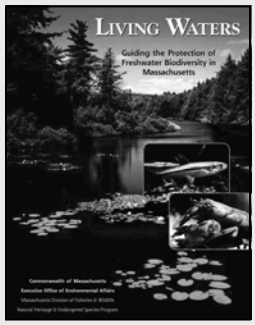
In this report, the Natural Heritage & Endangered Species Program provides you with site-specific biodiversity information for your area. Protecting our biodiversity today will help ensure the full variety of species and natural communities that comprise our native flora and fauna will persist for generatons to come.

The information in this report is the result of two statewide biodiversity conservation planning projects, ***BioMap*** and ***Living Waters***. The goal of the BioMap project, completed in 2001, was to identify and delineate the most important areas for the long-term viability of terrestrial, wetland, and estuarine elements of biodiversity in Massachusetts. The goal of the Living Waters project, completed in 2003, was to identify and delineate the rivers, streams, lakes, and ponds that are important for freshwater biodiversity in the Commonwealth. These two conservation plans are based on documented observations of rare species, natural communities, and exemplary habitats.

What is a Core Habitat?

Both BioMap and Living Waters delineate ***Core Habitats*** that identify the most critical sites for biodiversity conservation across the state. Core Habitats represent habitat for the state's most viable rare plant and animal populations and include exemplary natural communities and aquatic habitats. Core Habitats represent a wide diversity of rare species and natural communities (see Table 1), and these areas are also thought to contain virtually all of the other described species in Massachusetts. Statewide, BioMap Core Habitats encompass 1,380,000 acres of uplands and wetlands, and Living Waters identifies 429 Core Habitats in rivers, streams, lakes, and ponds.





Get your copy of the ***BioMap*** and ***Living Waters*** reports! Contact Natural Heritage at 508-792-7270, Ext. 200 or email natural.heritage@state.ma.us. Posters and detailed technical reports are also available.

Core Habitats and Land Conservation

One of the most effective ways to protect biodiversity for future generations is to protect Core Habitats from adverse human impacts through land conservation. For Living Waters Core Habitats, protection efforts should focus on the ***riparian areas***, the areas of land adjacent to water bodies. A naturally vegetated buffer that extends 330 feet (100 meters) from the water's edge helps to maintain cooler water temperature and to maintain the nutrients, energy, and natural flow of water needed by freshwater species.

In Support of Core Habitats

To further ensure the protection of Core Habitats and Massachusetts' biodiversity in the long-term, the BioMap and Living Waters projects identify two additional areas that help support Core Habitats.

In BioMap, areas shown as ***Supporting Natural Landscape*** provide buffers around the Core Habitats, connectivity between Core Habitats, sufficient space for ecosystems to function, and contiguous undeveloped habitat for common species. Supporting Natural Landscape was

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generated using a Geographic Information Systems (GIS) model, and its exact boundaries are less important than the general areas that it identifies. Supporting Natural Landscape represents potential land protection priorities once Core Habitat protection has been addressed.

In Living Waters, ***Critical Supporting Watersheds*** highlight the immediate portion of the watershed that sustains, or possibly degrades, each freshwater Core Habitat. These areas were also identified using a GIS model. Critical Supporting Watersheds represent developed and undeveloped lands, and can be quite large. Critical Supporting Watersheds can be helpful in land-use planning, and while they are not shown on these maps, they can be viewed in the Living Waters report or downloaded from www.mass.gov/mgis.

Understanding Core Habitat Species, Community, and Habitat Lists

What's in the List?

Included in this report is a list of the species, natural communities, and/or aquatic habitats for each Core Habitat in your city or town. The lists are organized by Core Habitat number.

For the larger Core Habitats that span more than one town, the species and community lists refer to the entire Core Habitat, not just the portion that falls within your city or town. For a list of all the state-listed rare species within your city or town's boundary, whether or not they are in Core Habitat, please see the town rare species lists available at www.nhesp.org.

The list of species and communities within a Core Habitat contains only the species and natural communities that were explicitly included in a given BioMap or Living Waters Core Habitat. Other rare species or examples of other natural communities may fall within the Core Habitat, but for various reasons are not included in the list. For instance, there are a few rare species that are omitted from the list or summary because of their particular sensitivity to the threat of collection. Likewise, the content of many very small Core Habitats are not described in this report or list, often because they contain a single location of a rare plant

Table 1. The number of rare species and types of natural communities explicitly included in the BioMap and Living Waters conservation plans, relative to the total number of native species statewide.

BioMap

	Species and Verified Natural Community Types	
Biodiversity Group	**Included in BioMap**	**Total Statewide**
Vascular Plants	246	1,538
Birds	21	221 breeding species
Reptiles	11	25
Amphibians	6	21
Mammals	4	85
Moths and Butterflies	52	An estimated 2,500 to 3,000
Damselflies and Dragonflies	25	An estimated 165
Beetles	10	An estimated 2,500 to 4,000
Natural Communities	92	> 105 community types

Living Waters

	Species	
Biodiversity Group	**Included in Living Waters**	**Total Statewide**
Aquatic Vascular Plants	23	114
Fishes	11	57
Mussels	7	12
Aquatic Invertebrates	23	An estimated > 2500

species. Some Core Habitats were created for suites of common species, such as forest birds, which are particularly threatened by habitat fragmentation. In these cases, the individual common species are not listed.

What does 'Status' mean?

The Division of Fisheries and Wildlife determines a status category for each rare species listed under the Massachusetts Endangered Species Act, M.G.L. c.131A, and its implementing regulations, 321 CMR 10.00. Rare species are categorized as Endangered, Threatened, or of Special Concern according to the following:

- ***Endangered*** species are in danger of extinction throughout all or a significant portion of their range or are in danger of extirpation from Massachusetts.
- ***Threatened*** species are likely to become Endangered in Massachusetts in the foreseeable future throughout all or a significant portion of their range.
- ***Special Concern*** species have suffered a decline that could threaten the species if allowed to continue unchecked or occur in such small numbers or with such restricted distribution or specialized habitat requirements that they could easily become Threatened in Massachusetts.

In addition, the Natural Heritage & Endangered Species Program maintains an unofficial ***watch list*** of plants that are tracked due to potential conservation interest or concern, but are not regulated under the Massachusetts Endangered Species Act or other laws or regulations. Likewise, described natural communities are not regulated any laws or regulations, but they can help to identify ecologically important areas that are worthy of protection. The status of natural communities reflects the documented number and acreages of each community type in the state:

- ***Critically Imperiled*** communities typically have 5 or fewer documented sites or have very few remaining acres in the state.
- ***Imperiled*** communities typically have 6-20 sites or few remaining acres in the state.
- ***Vulnerable*** communities typically have 21-100 sites or limited acreage across the state.
- ***Secure*** communities typically have over 100 sites or abundant acreage across the state; however excellent examples are identified as Core Habitat to ensure continued protection.

Legal Protection of Biodiversity

BioMap and Living Waters present a powerful vision of what Massachusetts would look like with full protection of the land that supports most of our biodiversity. To create this vision, some populations of state-listed rare species were deemed more likely to survive over the long-term than others.

Regardless of their potential viability, all sites of state-listed species have full legal protection under the Massachusetts Endangered Species Act (M.G.L. c.131A) and its implementing regulations (321 CMR 10.00). Habitat of state-listed wildlife is also protected under the Wetlands Protection Act Regulations (310 CMR 10.37 and 10.59). The ***Massachusetts Natural Heritage Atlas*** shows **Priority Habitats**, which are used for regulation under the Massachusetts Endangered Species Act and Massachusetts Environmental Policy Act (M.G.L. c.30) and **Estimated Habitats**, which are used for regulation of rare wildlife habitat under the Wetlands Protection Act. For more information on rare species regulations, see the *Massachusetts Natural Heritage Atlas*, available from the Natural Heritage & Endangered Species Program in book and CD formats.

BioMap and Living Waters are conservation planning tools and do not, in any way, supplant the Estimated and Priority Habitat Maps which have regulatory significance. Unless and until the combined BioMap and Living Waters vision is fully realized, we must continue to protect all populations of our state-listed species and their habitats through environmental regulation.

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Understanding Core Habitat Summaries

Following the BioMap and Living Waters Core Habitat species and community lists, there is a descriptive summary of each Core Habitat that occurs in your city or town. This summary highlights some of the outstanding characteristics of each Core Habitat, and will help you learn more about your city or town's biodiversity. You can find out more information about many of these species and natural communities by looking at specific ***fact sheets*** at www.nhesp.org.

Next Steps

BioMap and Living Waters were created in part to help cities and towns prioritize their land protection efforts. While there are many reasons to conserve land – drinking water protection, recreation, agriculture, aesthetics, and others – BioMap and Living Waters Core Habitats are especially helpful to municipalities seeking to protect the rare species, natural communities, and overall biodiversity within their boundaries. Please use this report and map along with the rare species and community fact sheets to appreciate and understand the biological treasures in your city or town.

Protecting Larger Core Habitats

Core Habitats vary considerably in size. For example, the average BioMap Core Habitat is 800 acres, but Core Habitats can range from less than 10 acres to greater than 100,000 acres. These larger areas reflect the amount of land needed by some animal species for breeding, feeding, nesting, overwintering, and long-term survival. Protecting areas of this size can be very challenging, and requires developing partnerships with neighboring towns.

Prioritizing the protection of certain areas within larger Core Habitats can be accomplished through further consultation with Natural Heritage Program biologists, and through additional field research to identify the most important areas of the Core Habitat.

Additional Information

If you have any questions about this report, or if you need help protecting land for biodiversity in your community, the Natural Heritage & Endangered Species Program staff looks forward to working with you.

Contact the Natural Heritage & Endangered Species Program:

by Phone *508-792-7270, Ext. 200*

by Fax: *508-792-7821*

by Email: *natural.heritage@state.ma.us*.

by Mail: *North Drive*
Westborough, MA 01581

The GIS datalayers of BioMap and Living Waters Core Habitats are available for download from MassGIS: www.mass.gov/mgis

Check out www.nhesp.org for information on:

- Rare species in your town
- Rare species fact sheets
- BioMap and Living Waters projects
- Natural Heritage publications, including:
  - Field guides
  - Natural Heritage Atlas, and more!

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BioMap: Species and Natural Communities

Rochester

Core Habitat BM1208

Natural Communities

Common Name	Scientific Name	Status
Forest Seep Community		Secure

Plants

Common Name	Scientific Name	Status
Plymouth Gentian	*Sabatia kennedyana*	Special Concern
Pondshore Knotweed	*Polygonum puritanorum*	Special Concern
Round-Fruited False-Loosestrife	*Ludwigia sphaerocarpa*	Endangered

Vertebrates

Common Name	Scientific Name	Status
American Bittern	*Botaurus lentiginosus*	Endangered
Bald Eagle	*Haliaeetus leucocephalus*	Endangered
Eastern Box Turtle	*Terrapene carolina*	Special Concern
King Rail	*Rallus elegans*	Threatened
Northern Parula	*Parula americana*	Threatened
Pied-Billed Grebe	*Podilymbus podiceps*	Endangered
Spotted Turtle	*Clemmys guttata*	Special Concern
Wood Turtle	*Clemmys insculpta*	Special Concern

Core Habitat BM1225

Natural Communities

Common Name	Scientific Name	Status
Alluvial Red Maple Swamp		Vulnerable
Atlantic White Cedar Bog		Imperiled
Coastal Atlantic White Cedar Swamp		Imperiled
Kettlehole Level Bog		Imperiled
Red Maple Swamp		Secure

Plants

Common Name	Scientific Name	Status
Gypsywort	*Lycopus rubellus*	Endangered

Invertebrates

Common Name	Scientific Name	Status
New England Bluet	*Enallagma laterale*	Special Concern
Water-Willow Stem Borer	*Papaipema sulphurata*	Threatened

Vertebrates

Common Name	Scientific Name	Status
Four-toed Salamander	*Hemidactylium scutatum*	Special Concern
Spotted Turtle	*Clemmys guttata*	Special Concern

Core Habitat BM1253

Invertebrates

Common Name	Scientific Name	Status
Water-Willow Stem Borer	*Papaipema sulphurata*	Threatened

Core Habitat BM1262

Plants

Common Name	Scientific Name	Status
Small Site for Rare Plant		

Core Habitat BM1263

Plants

Common Name	Scientific Name	Status
Small Site for Rare Plant		

BioMap: Species and Natural Communities

Rochester

Core Habitat BM1268

Plants

Common Name	Scientific Name	Status
Small Site for Rare Plant		

Core Habitat BM1273

Natural Communities

Common Name	Scientific Name	Status
Alluvial Red Maple Swamp		Vulnerable

Vertebrates

Common Name	Scientific Name	Status
Eastern Box Turtle	*Terrapene carolina*	Special Concern
Spotted Turtle	*Clemmys guttata*	Special Concern

Core Habitat BM1286

Natural Communities

Common Name	Scientific Name	Status
Red Maple Swamp		Secure

Invertebrates

Common Name	Scientific Name	Status
Water-Willow Stem Borer	*Papaipema sulphurata*	Threatened

Vertebrates

Common Name	Scientific Name	Status
Eastern Box Turtle	*Terrapene carolina*	Special Concern
Spotted Turtle	*Clemmys guttata*	Special Concern

BioMap: Core Habitat Summaries

Rochester

Core Habitat BM1208

This large Core Habitat comprises shorelines, forested wetlands, and uplands around Assawompsett, Great Quittacas, and Little Quittacas Ponds, as well as several miles of the Nemasket River and its tributaries. These areas contain important nesting and feeding habitats for Bald Eagles and other birds, habitat for rare turtles, a large example of a Forest Seep natural community, and several populations of rare pondshore plant species, including the Endangered Round-Fruited Loosestrife.

Natural Communities

The part of this Core Habitat in Lakeville contains a relatively large, although young, Forest Seep community that is well-buffered by naturally vegetated land. Forest Seeps are hardwood forests found on wet slopes, where groundwater seeps out of the earth. The overstory is similar to that of the surrounding forest, but many typical wetland ferns, shrubs, and other plants occur as well.

Plants

Several rare plant populations are found along the shores and islands of this large pond complex. Most notable may be the two high-quality populations of the Endangered Round-Fruited Loosestrife, which grows along acidic ponds associated with large wetland complexes.

Vertebrates

This Core Habitat contains important nesting and feeding habitat for Bald Eagles, and habitat for rare marsh birds and migrating waterfowl. Northern Parula warblers also nest here. Riparian areas and adjacent wetlands and uplands along the Nemasket River and Fall Brook provide habitat for Spotted Turtles and Wood Turtles. Spotted Turtles also may occur in smaller wetlands and upland areas along the edges of Assawompsett Pond.

Core Habitat BM1225

This wetland-dominated Core Habitat encompasses Cedar Swamp in Rochester, as well as portions of Black Brook and adjacent wetlands in Middleborough. Included in the Core Habitat is one of the state's largest Alluvial Red Maple Swamps that provides habitat for plants such as the Endangered Gypsywort. It also contains significant habitat for Spotted Turtles and Four-toed Salamanders, and the shallow wetlands support the rare Water-willow Stem Borer moth.

Natural Communities

This Core Habitat contains a variety of high-quality bogs and forested swamps. One of the largest mature and disturbance-free Alluvial Red Maple Swamps in the state extends along a brook in both towns in this Core Habitat. Alluvial Red Maple Swamps are a type of Red Maple Swamp that occurs in low areas along rivers and streams. Regular flooding enriches the soil with nutrients, resulting in an unusual set of associated trees and plants.

Plants

This Core Habitat contains one of the state's two most viable occurrences of the Endangered Gypsywort, a member of the mint family which is found here in an Alluvial Red Maple Swamp.

Invertebrates

Dispersed throughout this Core Habitat are shallow wetlands with Water-willow, which are inhabited by the Water-willow Stem Borer moth, a Threatened species that is found nowhere in the world outside of Massachusetts. This Core Habitat is located less than 10 km from other habitats for the Water-willow Stem Borer, including Core Habitats in Rochester and Middleborough. This proximity allows for occasional movement of individual moths between all of these sites, which is important to maintain a viable population of this species. This Core Habitat also includes the northern portion of Snipatuit Pond, which is habitat for the New England Bluet damselfly. Most of this Core Habitat appears to be unprotected.

Vertebrates

This Core Habitat encompasses Cedar Swamp and Black Brook and adjacent wetlands. It provides significant habitat for Spotted Turtles as well as habitat for Four-toed Salamanders. The area may also support Marbled Salamanders, Wood Turtles, and Northern Parula warblers, and it contains habitat for birds that are characteristic of forested wetlands.

Core Habitat BM1253

Invertebrates

This Core Habitat includes a Red Maple swamp and several vernal pools with Water-willow that are habitat for the Water-willow Stem Borer moth, a Threatened species that is found nowhere in the world outside of Massachusetts. This Core Habitat is located less than 10 km from other habitats for the Water-willow Stem Borer, including Core Habitats in Rochester and Middleborough. This proximity allows for occasional movement of individual moths between all of these sites, which is important to maintain a viable population of this species. This Core Habitat appears to be unprotected.

Core Habitat BM1273

This Core Habitat covers over three square miles along Branch Brook and the upper portions of the Mattapoisett River, which provide significant habitat for Spotted and Eastern Box Turtles. It also includes an excellent example of a large Alluvial Red Maple Swamp.

Natural Communities

This Core Habitat contains an excellent Alluvial Red Maple Swamp, mostly in Mattapoisett, that is well-buffered within naturally forested land. At 103 acres, it is the second largest of its kind identified in the state. Alluvial Red Maple Swamps are a type of Red Maple Swamp that occurs in low areas along rivers and streams. Regular flooding enriches the soil with nutrients, resulting in an unusual set of associated trees and plants.

Vertebrates

With an interspersion of small streams, forested wetlands and uplands, small cranberry bogs, and scattered agricultural land, this Core Habitat encompasses two roadless blocks that provide significant habitat for Spotted Turtles and Eastern Box Turtles. Emergent wetlands along the upper reaches of the Mattapoisett River likely provide habitat for wetland birds.

BioMap: Core Habitat Summaries

Rochester

Core Habitat BM1286

This Core Habitat is one of the largest blocks of relatively unfragmented wildlife habitat remaining in southern Plymouth County. The area provides significant habitat for Eastern Box Turtles, Spotted Turtles, and likely Marbled Salamanders. It also contains a large, well-buffered Red Maple Swamp community and several shallow wetlands that provide habitat for the rare Water-willow Stem Borer moth. The majority of this Core Habitat is protected as the Haskell Swamp Wildlife Management Area, and further conservation of the remaining unprotected areas of the Core Habitat is needed.

Natural Communities

This Core Habitat contains a large, well-buffered Red Maple Swamp, free of exotic invasive species and with intact hydrology. Red Maple Swamps are acidic forested wetlands that are dominated by Red Maple. They are the most common forested wetlands in Massachusetts. This community type is highly variable in its species composition.

Invertebrates

Dispersed throughout this Core Habitat are shallow wetlands with Water-willow inhabited by the Water-willow Stem Borer moth, a Threatened Species found nowhere in the world outside of Massachusetts. This Core Habitat, together with the Core Habitat on the opposite side of Route 195, provides an excellent opportunity to conserve a large and minimally fragmented area with numerous small wetland habitats in close proximity. Such proximity allows for movement of individual Water-willow Stem Borer moths between the wetlands, which is important to maintain a viable population of this species.

Vertebrates

This large block of relatively unfragmented land provides significant habitat for Eastern Box Turtles, Spotted Turtles, and probably Marbled Salamanders. The area is also an important block of habitat for birds of upland forests and forested wetlands characteristic of the southeastern Massachusetts Coastal Plain. The protection and management of cranberry bogs as impounded wetlands could enhance this area for a variety of wetland wildlife.

Core Habitat LW093

Fishes

Common Name	Scientific Name	Status
Bridle Shiner	*Notropis bifrenatus*	Special Concern

Core Habitat LW161

Invertebrates

Common Name	Scientific Name	Status
Eastern Pondmussel	*Ligumia nasuta*	Special Concern

Core Habitat LW163

Invertebrates

Common Name	Scientific Name	Status
Eastern Pondmussel	*Ligumia nasuta*	Special Concern
Tidewater Mucket	*Leptodea ochracea*	Special Concern

Living Waters: Core Habitat Summaries

Rochester

Core Habitat LW093

This Core Habitat supports one of only two known populations of Bridle Shiner in the Buzzards Bay Watershed. This fish Species of Special Concern is thought to be in decline in eastern Massachusetts as it was found at only 23% of its former sites in recent surveys. The Bridle Shiner is typically found in well-vegetated, quiet waters. It feeds on small aquatic insects and other invertebrates, and is an important part of the freshwater ecosystem as prey for larger fishes. The Bridle Shiner population in this section of the Mattapoisett River has persisted since at least 1955.

Core Habitat LW161

Snipatuit Pond is a 710-acre warmwater pond that supports a diverse mussel fauna. Five of the state's twelve mussel species are known here, including the rare Eastern Pondmussel. Mussels can be found embedded in the bottom sands, below the "stained" or tea-colored waters that are naturally created by the surrounding wetlands.

Core Habitat LW163

The large Assawompset Pond complex (Assawompset, Pocksha, and Great Quittacas Ponds) supports a very diverse group of freshwater mussels. Seven of the state's twelve mussel species are present, including the rare Tidewater Mucket and the Eastern Pondmussel. The populations of these rare mussels are particularly significant because juvenile and adult specimens have been observed, suggesting that these mussels are reproducing successfully. This pond complex supplies much of New Bedford's drinking water, and as such receives minimal recreational use and the shorelines remain largely undeveloped.

Help Save Endangered Wildlife!

Please contribute on your Massachusetts income tax form or directly to the

Natural Heritage &
Endangered Species Fund

To learn more about the Natural Heritage & Endangered Species Program and the Commonwealth's rare species, visit our web site at: www.nhesp.org.